



**Mini**

**Workbook**

# How the brain learns

The basics of cognitive architecture

# The Paradox of Learning

Over the last century, our understanding of how learning happens has expanded greatly, uncovering surprising insights that challenge traditional teaching methods. One of these insights is the paradox of memory and learning: in order to retain knowledge for the long term, we must first go through periods of forgetting in the short term. This counterintuitive process has significant implications for how we design educational experiences, highlighting the critical role of retrieval practice in promoting effective and lasting learning.

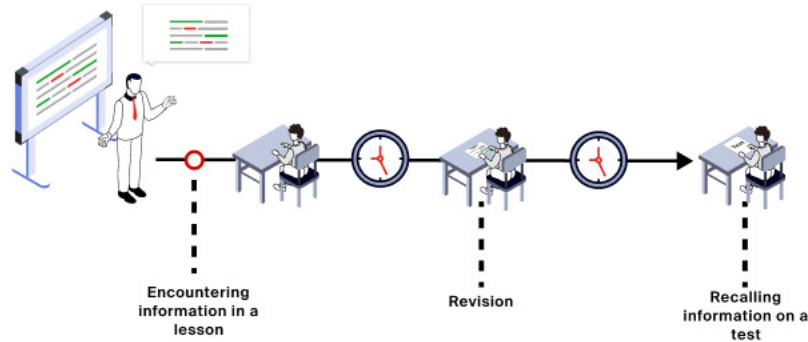
Quote

*"Learning is not intuitive, and the best strategies for effective and efficient learning are often those that feel the least to the learner like they are working."*

- Anne M. Cleary

## 1 How we think learning happens

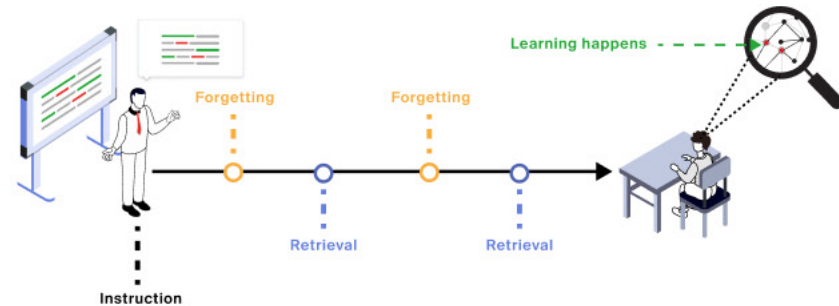
We often view learning as a process where students are introduced to a topic in a lesson, review it before an exam, and are then recall it on a test (where we determine if they "know" it).



## 2 How learning actually happens

Research shows that to remember content, we must first forget it and then actively retrieve it from our memory. It is through this act of retrieval that true learning occurs.

To retain learned material in the long term, we must first experience short-term forgetting.



### Assignment 1 Why is forgetting an important part of learning?

Study the advanced organizer on the previous page. Identify 3 to 6 key points about the role of forgetting in the learning process.

Using the timeline diagram provided below, give a description how these points align with different stages of the learning process: instruction, forgetting, and retrieval.

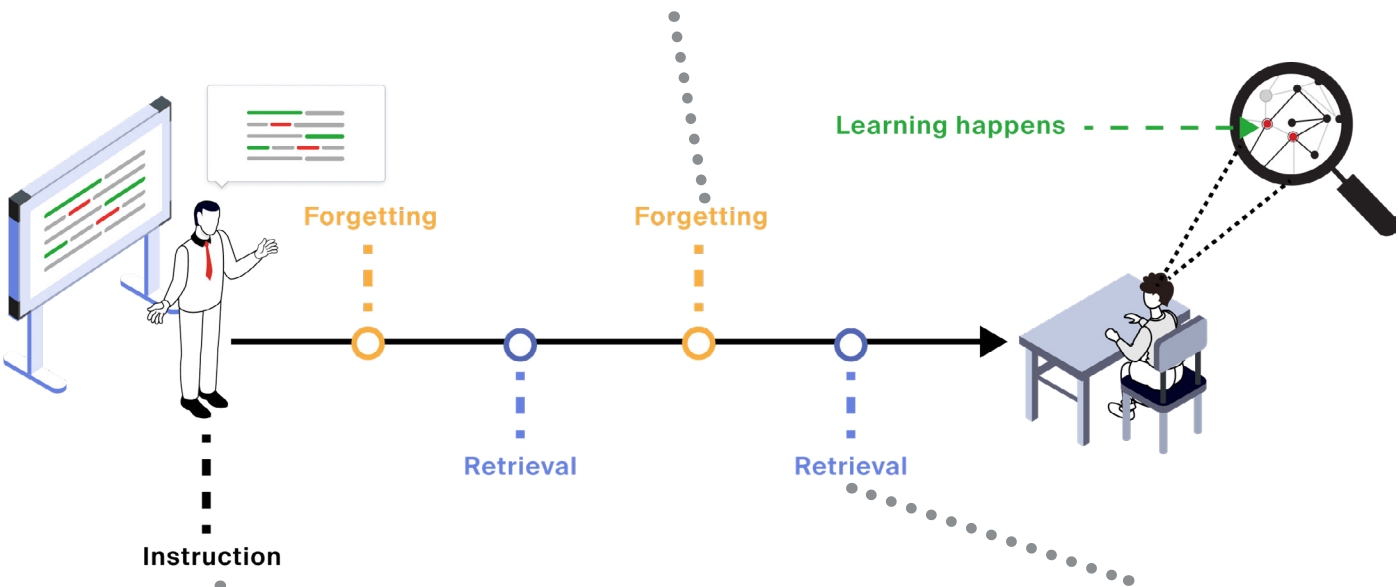
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Assignment 2

Forgetting and retrieving

When, if ever, do you incorporate “forgetting and retrieving” as a strategy for supporting student learning in your own classroom? What does that look like?

Step 1

Reflect on your current classroom practices. Identify specific instances where you have intentionally or unintentionally used forgetting and retrieving as part of your instructional strategy

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Step 2

Analyze the impact of these strategies on student learning and retention.

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Assignment 3

The impact of retrieval on student learning

Reflect on your current teaching practices. If you were to intentionally incorporate more frequent and varied retrieval practice activities throughout a unit, how might your students react?

Which specific activities would you implement in your practice?

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Positive reactions of students

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Negative reactions of students

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